

SEQUENCE LISTING

<110> Chen, Lieping
Bajorath, Jurgen

<120> ICOS Mutants

<130> 07039-331001

<160> 42

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<212> PRT

<213> Mus musculus

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			20					25					30		
Thr	Asn	Asp	Gln	Met	Thr	Val	Ala	Thr	Thr	Phe	Thr	Glu	Lys	Asn	Thr
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Val	Gly	Phe	Leu	Asp	Tyr	Pro	Phe	Ser	Gly	Thr	Phe	Asn	Glu	Ser	Arg
	50					55					60				
Val	Asn	Leu	Thr	Ile	Gln	Gly	Leu	Arg	Ala	Val	Asp	Gly	Leu	Tyr	Leu
65				70						75					80
Cys	Val	Leu	Phe	Val	Gly	Met	Gly	Gln	Ile	Tyr	Val	Ile	Pro	Glu	Pro
				85					90					95	

<210> 2

<211> 96

<212> PRT

<213> Rattus norvegicus

<400> 2

Val	Thr	Gln	Pro	Ser	Val	Leu	Ala	Ser	Ser	His	Gly	Val	Ala	Ser	Phe
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Pro	Cys	Glu	Ala	Ser	Ser	His	Asn	Thr	Asp	Val	Val	Thr	Val	Leu	Gln
			20					25					30		
Thr	Asn	Asp	Gln	Val	Thr	Val	Ala	Thr	Thr	Phe	Thr	Val	Lys	Asn	Thr
		35					40					45			
Leu	Gly	Phe	Leu	Asp	Asp	Pro	Phe	Ser	Gly	Thr	Phe	Asn	Glu	Ser	Arg
	50					55					60				
Val	Asn	Leu	Thr	Ile	Gln	Gly	Leu	Arg	Ala	Ala	Asp	Gly	Leu	Tyr	Phe
65				70						75					80
Cys	Val	Leu	Phe	Val	Gly	Met	Gly	Gln	Ile	Tyr	Val	Ile	Pro	Glu	Pro
				85					90					95	

<210> 3

<211> 96

<212> PRT

<213> Homo sapiens

20200722-020702

<400> 3

Val	Ala	Gln	Pro	Ala	Val	Leu	Ala	Ser	Ser	Arg	Gly	Ile	Ala	Ser	Phe
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Val	Cys	Glu	Ala	Ser	Pro	Gly	Lys	Ala	Thr	Val	Val	Thr	Val	Leu	Gln
			20					25					30		
Ala	Asp	Ser	Gln	Val	Thr	Val	Ala	Ala	Thr	Tyr	Met	Met	Gly	Asn	Glu
		35					40					45			
Leu	Thr	Phe	Leu	Asp	Asp	Ser	Ile	Thr	Gly	Thr	Ser	Ser	Gly	Asn	Gln
	50					55					60				
Val	Asn	Leu	Thr	Ile	Gln	Gly	Leu	Arg	Ala	Met	Asp	Gly	Leu	Tyr	Ile
65					70					75					80
Cys	Val	Leu	Tyr	Leu	Gly	Ile	Gly	Gln	Ile	Tyr	Val	Ile	Pro	Glu	Pro
				85					90					95	

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<212> PRT

<213> Bos taurus

<400> 4

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Val	Cys	Glu	Ala	Ser	Ser	His	Lys	Ala	Thr	Val	Val	Thr	Val	Leu	Gln
			20					25					30		
Ala	Asn	Ser	Gln	Met	Thr	Val	Ala	Met	Thr	Tyr	Thr	Val	Glu	Asn	Glu
		35					40					45			
Leu	Thr	Phe	Ile	Asp	Asp	Ser	Thr	Thr	Gly	Ile	Ser	His	Gly	Asn	Lys
	50					55					60				
Val	Asn	Leu	Thr	Ile	Gln	Gly	Leu	Ser	Ala	Met	Asp	Gly	Leu	Tyr	Ile
65					70					75					80
Cys	Val	Leu	Tyr	Val	Gly	Met	Gly	Gln	Ile	Tyr	Val	Ile	Pro	Glu	Pro
				85					90					95	

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<212> PRT

<213> Mus musculus

<400> 5

Val	Gln	Pro	Leu	Val	Asp	Ser	Glu	Ser	Leu	Cys	Leu	Ala	Ala	Leu	Tyr
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Gly	Val	Asn	Asp	Val	Gly	Asn	Gly	Asn	Phe	Thr	Tyr	Gln	Pro	Gln	Phe
			20					25					30		
Arg	Ser	Asn	Ala	Glu	Phe	Asn	Cys	Asp	Gly	Asp	Phe	Asp	Asn	Glu	Thr
		35					40					45			
Val	Thr	Phe	Arg	Leu	Trp	Asn	Leu	His	Val	Asn	His	Thr	Asp	Ile	Tyr
	50					55					60				
Phe	Cys	Lys	Ile	Glu	Phe	Met	Tyr	Pro	Pro	Pro	Tyr	Leu	Asp	Asn	Glu
65					70					75					80
Arg	Ser	Asn	Gly	Thr	Ile	Ile	His	Ile	Lys	Glu	Lys	His	Leu	Cys	
				85					90					95	

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<212> PRT

<213> Rattus norvegicus

204020"2292400T

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Gly	Val	Asn	Asp	Val	Gly	Asn	Gly	Asn	Phe	Thr	Tyr	Gln	Pro	Gln	Phe
			20					25					30		
Arg	Pro	Asn	Val	Gly	Phe	Asn	Cys	Asp	Gly	Asn	Phe	Asp	Asn	Glu	Thr
		35					40					45			
Val	Thr	Phe	Arg	Leu	Trp	Asn	Leu	Asp	Val	Asn	His	Thr	Asp	Ile	Tyr
	50					55					60				
Phe	Cys	Lys	Ile	Glu	Val	Met	Tyr	Pro	Pro	Pro	Tyr	Leu	Asp	Asn	Glu
65					70					75					80
Lys	Ser	Asn	Gly	Thr	Ile	Ile	His	Ile	Lys	Glu	Lys	His	Leu	Cys	
				85					90					95	

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<212> PRT

<213> Bos taurus

<400> 7

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Gly	Ala	Asp	Ala	Val	Val	Asn	Gly	Asn	Phe	Ser	His	Pro	His	Gln	Phe
			20					25					30		
His	Ser	Thr	Thr	Gly	Phe	Asn	Cys	Asp	Gly	Lys	Leu	Gly	Asn	Glu	Thr
		35					40					45			
Val	Thr	Phe	Tyr	Leu	Lys	Asn	Leu	Tyr	Val	Asn	Gln	Thr	Asp	Ile	Tyr
	50					55					60				
Phe	Cys	Lys	Ile	Glu	Val	Met	Tyr	Pro	Pro	Pro	Tyr	Leu	Asp	Asn	Glu
65					70					75					80
Lys	Ser	Asn	Gly	Thr	Ile	Ile	His	Val	Lys	Glu	Gln	His	Phe	Cys	
				85					90					95	

<210> 8

<211> 95

<212> PRT

<213> Homo sapiens

<400> 8

Val	Gln	Pro	Met	Ala	Tyr	Asp	Ala	Asn	Leu	Cys	Phe	Ser	Ala	Leu	His
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Gly	Leu	Asp	Ala	Val	Val	Tyr	Gly	Asn	Tyr	Ser	Gln	Gln	Leu	Gln	Val
			20					25					30		
Tyr	Ser	Lys	Thr	Gly	Phe	Asn	Cys	Asp	Gly	Lys	Leu	Gly	Asn	Glu	Ser
		35					40					45			
Val	Thr	Phe	Tyr	Leu	Gln	Asn	Leu	Tyr	Val	Asn	Gln	Thr	Asp	Ile	Tyr
	50					55					60				
Phe	Cys	Lys	Ile	Glu	Val	Met	Tyr	Pro	Pro	Pro	Tyr	Leu	Asp	Asn	Glu
65					70					75					80
Lys	Ser	Asn	Gly	Thr	Ile	Ile	His	Val	Lys	Glu	Lys	His	Leu	Cys	
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<213> Mus musculus

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<400> 9

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Cys	Lys	Tyr	Pro	Asp	Ile	Val	Gln	Gln	Leu	Lys	Met	Arg	Leu	Phe	Arg
			20					25					30		
Glu	Arg	Glu	Val	Leu	Cys	Glu	Leu	Thr	Lys	Thr	Lys	Gly	Ser	Gly	Asn
		35					40					45			
Ala	Val	Ser	Ile	Lys	Asn	Pro	Met	Leu	Cys	Leu	Tyr	His	Leu	Ser	Asn
	50					55					60				
Asn	Ser	Val	Ser	Phe	Phe	Leu	Asn	Asn	Pro	Asp	Ser	Ser	Gln	Gly	Ser
65					70					75					80
Tyr	Tyr	Phe	Cys	Ser	Leu	Ser	Ile	Phe	Asp	Pro	Pro	Pro	Phe	Gln	Glu
				85					90					95	
Arg	Asn	Leu	Ser	Gly	Gly	Tyr	Leu	His	Ile	Tyr	Glu	Ser	Gln	Leu	Cys
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<212> PRT

<213> Homo sapiens

<400> 10

Ala	Asn	Tyr	Glu	Met	Phe	Ile	Phe	His	Asn	Gly	Gly	Val	Gln	Ile	Leu
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Cys	Lys	Tyr	Pro	Asp	Ile	Val	Gln	Gln	Phe	Lys	Met	Gln	Leu	Leu	Lys
			20					25					30		
Gly	Gly	Gln	Ile	Leu	Cys	Asp	Leu	Thr	Lys	Thr	Lys	Gly	Ser	Gly	Asn
		35					40					45			
Thr	Val	Ser	Ile	Lys	Ser	Leu	Lys	Phe	Cys	His	Ser	Gln	Leu	Ser	Asn
	50					55					60				
Asn	Ser	Val	Ser	Phe	Phe	Leu	Tyr	Asn	Leu	Asp	His	Ser	His	Ala	Asn
65					70					75					80
Tyr	Tyr	Phe	Cys	Asn	Leu	Ser	Ile	Phe	Asp	Pro	Pro	Pro	Phe	Lys	Val
				85					90					95	
Thr	Leu	Thr	Gly	Gly	Tyr	Leu	His	Ile	Tyr	Glu	Ser	Gln	Leu	Cys	
			100					105						110	

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<213> Homo sapiens

<400> 11

Met	Tyr	Pro	Pro	Pro	Tyr
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<210> 12

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<212> PRT

<213> Homo sapiens

<400> 12

Met	Lys	Ser	Gly	Leu	Trp	Tyr	Phe	Phe	Leu	Phe	Cys	Leu	Arg	Ile	Lys
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			20					25					30		

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 50 55 60
 Leu Thr Lys Thr Lys Gly Ser Gly Asn Thr Val Ser Ile Lys Ser Leu
 65 70 75 80
 Lys Phe Cys His Ser Gln Leu Ser Asn Asn Ser Val Ser Phe Phe Leu
 85 90 95
 Tyr Asn Leu Asp His Ser His Ala Asn Tyr Tyr Phe Cys Asn Leu Ser
 100 105 110
 Ile Phe Asp Pro Pro Pro Phe Lys Val Thr Leu Thr Gly Gly Tyr Leu
 115 120 125
 His Ile Tyr Glu Ser Gln Leu Cys Cys Gln Leu Lys Phe Trp Leu Pro
 130 135 140
 Ile Gly Cys Ala Ala Phe Val Val Val Cys Ile Leu Gly Cys Ile Leu
 145 150 155 160
 Ile Cys Trp Leu Thr Lys Lys Lys Tyr Ser Ser Ser Val His Asp Pro
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<400> 36
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ggaggaggag aaaaaattga tagg

24

<210> 39
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<400> 39
caatttttga tccttctcct tttaaag

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ctttaaagg agaaggatca aaaattg

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<210> 41
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